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Does Environmental Performance Make Any Difference in the Relationship between Green Supply Chain Management and Hotel Competitiveness?

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Abstract: *Background:* This research examines the direct influence of green supply chain management (GSCM) on hotel competitiveness and the indirect impact through environmental performance (EP). The competition between enterprises in today's changing marketplace has significantly heightened. Therefore, identifying the factors that contribute to an enterprises' competitiveness has become more essential than it was previously. *Methods:* We adopted a pre-tested scale drawn from previous related studies and we were able to collect 430 forms from managers and department heads in Saudi Arabian hotels. *Results*: The study findings of the structural model by PLS-SEM revealed that environmental and economic GSCM had a considerable beneficial influence on hotel competitiveness. However, the social aspect of GSCM failed to have an extensive effect on hotel competitiveness. All three dimensions of GSCM have a substantial indirect influence on hotel competitiveness via EP. *Conclusion*: The study developed a complete model that integrates the elements of GSCM with EP and hotel competitiveness. The study presents numerous implications for hoteliers and academics.

Keywords: green supply chain management; hotel competitiveness; environmental performance; Saudi Arabia; green initiates

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1. Introduction

The hospitality sector is facing greater urgency to adjust in light of the changing climate and ecological issues. As a consequence, there has been a considerable reconsideration of conventional enterprise structures, with a greater concentration on environmental sustainability [1]. Hotels are witnessing a noteworthy transition, comprehending that applying GSCM is vital for both responsibility for the environment and financial prosperity [2]. Numerous research, e.g., [3–6], conducted in the hospitality sector demonstrated that integrating GSCM techniques, such as environmentally conscious sourcing, environmentally friendly activities, and reducing waste initiatives, might have a substantial positive influence on a hotel's environmental performance (EP). Hence, this provides value to a growing segment of guests concerned about the environment. Migdadi's research [2] stresses that implementing GSCM approaches not only conserves operating costs and consumption of resources, but also enhances a hotel's image while fostering guest loyalty and attracting environmentally conscientious guests. The methodological approach of GSCM is to integrate environmental practices through all aspects of an enterprises' supply chain [7–9]. This includes underscoring ethical and environmentally friendly procurement through choosing suppliers that promote environmentally friendly business practices and support the adoption of naturally grown materials [9]. Various research, e.g., [7–10], showed that GSCM processes properly concentrate on waste reduction via the adoption of efficient preventative initiatives, notably recycling, as well

as decreasing the use of disposables. Energy conservation is an integral aspect, considering hotels are utilizing technologies as well as procedures that reduce the consumption of energy while improving sustainability over time [11].

EP denotes the sector's determination and effectiveness in applying environmentally conscious and sustainable approaches that mitigate its environmental effect [12–14]. To date, the study by Nureen [1] indicates that EP encompasses activities that attempt to limit carbon emissions, safeguard natural resources, handle waste ethically, and adopt technologies that are energy-efficient. Hotels desire to improve their EP by applying initiatives including sourcing sustainably, energy conservation, waste reduction, and social responsibility [2,3]. The aim is not merely to fulfill legal requirements but also to coincide with the increasing global consciousness of environmental concerns [15]. Furthermore, improving EP indicates financial responsibility, appealing to environmentally concerned guests, fostering a positive image as well as contributing to the sustainable future of the hospitality industry [6].

The notion of competitiveness in the hotel sector goes beyond providing competitive prices or offering an easily accessible location. Currently, discerning guests frequently consider a hotel's awareness of the environment as well as dedication to sustainability when making decisions [16–19]. A recent investigation by Bianco et al. [20] underlines this finding, highlighting the significant connection between a hotel's competitiveness and its potential to demonstrate outstanding GSCM techniques throughout its operations [20]. Therefore, hotels that embrace sustainability throughout their business plan have a greater chance to thrive in today's competitive environment. Nevertheless, research conducted by Fuchs et al. [21] revealed that sustainable development is simply one component of the problem. Exceptional service quality, advanced technology, viable marketing, as well as general concentration on guest experience, serve as crucial parts of developing a hotel's competitive advantage [21]. Acknowledging the aforementioned, several hotels have adopted a win–win approach, attempting to meet guest expectations while concurrently embedding sustainability as an integral part of their brand's identity [18–21]. The concentration on conserving the environment not only benefits the globe but also improves the hotel's reputation in the competitive economy [20].

This research is considered the first attempt to investigate the role of environmental performance as a mediator in the relationship between GSCM practices, EP, and hotel competitiveness, as well as bridging a gap in understanding the nuanced dynamics between these variables. As a result, this research delves into how Saudi Arabian hotels may utilize sustainable practices throughout their GSCM initiatives to boost their competitiveness. In particular, the research aims to examine the mediating effect of EP on this relationship. Drawing upon the theoretical framework of GSCM theory offered by Beamon [22], which provided an insightful framework to comprehend the complex dynamics of the hospitality sector, we acknowledge GSCM practices as vital components shaping a hotel's marketplace. The aforementioned sustainable solutions, encompassing areas including sourcing, production, and distribution, not only add to operational efficiency but also directly connect with environmental responsibility objectives. By assessing how Saudi hotels could adopt such techniques efficiently, this study delves deeper into examining how GSCM, as well as effective EP, may promote them strategically for future success. The next section discusses the theoretical framework and builds the research hypotheses.

2. Literature Review

2.1. Green Supply Chain Management and Hotel Competitiveness

GSCM has become a prominent approach for augmenting enterprises' competitiveness due to the growing concentration on environmental consciousness [23–25]. GSCM encompasses three interconnected aspects: environmental, social, and economic [26]. GSCM environmental activities including sustainable buying and waste reduction [27]. The environmental initiatives improve a business's image and guarantee that it complies with regulatory requirements, additionally appealing to mindful guests, and offering the enterprise a competitive advantage [24,26]. The research conducted by Al-Khawaldah et al. [27] endorsed the necessity of employing environmental practices of GSCM in enterprises as well as creating a competitive advantage, such

as encouraging ecologically concerned guests and stakeholders to comply with environmental sustainability. Additionally, studies [26,28] showed that good practices with both employees and community enhances the social aspect of GSCM, which was found to have an impact on their loyalty and enhanced the competitive advantage of the organization. Organizations seek to develop their social connection with various stakeholders to benefit society [29]. The image of organizations is enhanced by the social aspect of sustainability [25,27]. On the other hand, the economic aspect of GSCM covers fanatical concerns over the long term. This helps to maintain long-term financial stability in addition to lowering operating costs [25,30]. Numerous research studies, i.e., [25,27–33], have verified that the economic aspect of GSCM has a critical role in encouraging enterprises to gain their competitive advantage. Enterprises' competitive advantage could be obtained through dedicating to financial stability and environmental preservation and implementing a complete and integrated policy for eco-friendly operations [27,31,32]. Xu & Gursoy [25] examined the impact of the three parts of GSCM on tourist impressions in hotels throughout the hospitality industry in the USA. The major findings showed that both the economic and environmental parts of GSCM had a favorable influence on guests' willingness to return to the hotel, hence increasing the enterprise's image and competitive edge. Drawing upon the previously mentioned reasoning, we formed the following hypotheses:

H1: *Environmental green supply chain management positively influences hotel competitiveness.*

H2: *Social green supply chain management positively influences hotel competitiveness.*

H3: *Economic green supply chain management positively influences hotel competitiveness.*

2.2. Green Supply Chain Management and Environmental Performance

An increasing body of studies, e.g., [1,2,4,5,8,13–15], signified an extensive and diverse relationship between GSCM and EP. Environmental initiatives such as mindful sourcing, waste reduction, and better energy efficiency effectively contribute to improving EP [10,15,25]. GSCM's environmental dimension also attempts to minimize the environmental impact and foster environmentally conscious operations [7–9,13,14]. The social aspect of GSCM addresses equitable working conditions and engagement in the community, and complements these initiatives by promoting advantageous effects on local communities and stakeholders [11,12,15,25,31]. Through establishing productive relationships and ensuring equitable labor standards, enterprises utilizing social GSCM support an increasingly environmentally friendly and moral operational framework [4–6,25]. This extensive strategy emphasizes the mutual dependence of ethical behavior and environmental conservation while verifying the assumption that socially responsible supply chain guidelines significantly enhance overall EP [25,34]. Economic viability, rooted within GSCM and centered on efficiency of resources and cost-effectiveness improves EP by supporting responsible resource utilization [25]. Enterprises that pursue economically sustainable practices contribute to better EP through responsible resource usage [35]. Recent research by Ahmed et al. [36] underlines the vital significance of economic GSCM in promoting environmentally sustainable enterprise operations. Based on the aforementioned investigation, we argue that:

H4: *Environmental green supply chain management positively influences EP.*

H5: *Social green supply chain management positively influences EP.*

H6: *Economic green supply chain management positively influences EP.*

2.3. Environmental Performance and Hotel Competitiveness

A growing number of studies, e.g., [3,6,12,15,37], indicate a significant link between an enterprises' EP and its competitive edge in the current business climate. A study by Pereira-Moliner et al. [6] revealed how hospitality organizations, including hotels, that prioritize eco-friendly strategies such as sustainable sourcing, waste minimization, and

energy efficiency, acquire a major market advantage. This focus on EP can boost a company's reputation, attracting environmentally concerned customers as well as investors who prioritize sustainability [38]. Furthermore, outstanding EP indicates a dedication to corporate social responsibility (CSR), an aspect of growing significance in influencing customer choices and perceptions among stakeholders [15]. Within a competitive environment in which conservational concerns are at the forefront, enterprises with resilient EP can not only adhere to regulations but also determine each other as market leaders as well as encouraging sustainable competitiveness and resilience within the constantly developing marketplace [39]. These findings lead us to formulate the following hypothesis:

H7: *Environmental performance positively influences hotel competitiveness.*

2.4. Environmental Performance Relationship with Green Supply Chain Management and Competitiveness

Numerous studies, e.g., [1,5,25,34,38,39], underlined the key function of EP in the relationship between GSCM and an enterprise's competitiveness. GSCM integrates a wide range of techniques—environmental, social, and economic—that encourage ecologically friendly operations along the entire supply chain [25]. Surprisingly, EP emerges as an essential indicator of successful GSCM implementation and a fundamental predictor of an enterprise's competitiveness [36,38]. Strong EP demonstrates a commitment to sustainability, respect for environmental standards, and operational efficiency—aspects that strongly influence guests' perceptions and stakeholder decisions [25,39]. In the fiercely competitive hospitality business, hotels that display robust EP as a result of successful GSCM practices are distinguished as leaders [25,34]. These hotels attract environmentally concerned guests and secure their overall market position [3,5,6,20,25]. Building on this basis of knowledge, the current study proposes the following hypotheses:

H8: *Environmental performance mediates the path from environmental green supply chain management to hotel competitiveness.*

H9: *Environmental performance mediates the path from social green supply chain management to hotel competitiveness.*

H10: *Environmental performance mediates the path from economic green supply chain management to hotel competitiveness.*

Figure 1 presents all the research hypotheses.

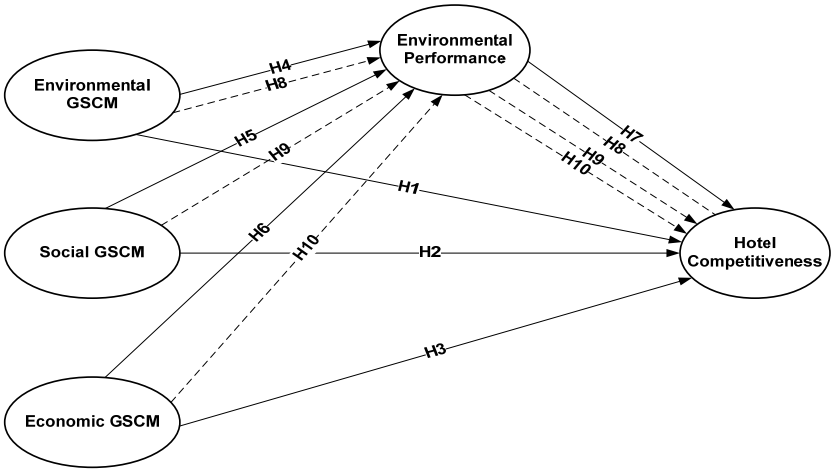

Figure 1. The research framework.

3. Methods

3.1. The Instrument

The instrument utilized comprises 3 main parts. Part 1 delineates the research purpose and offers instructions for completing the questionnaire form. Part 2 contains the respondents' profile. Part 3 involves assessing various aspects using a five point Likert scale. The Green Supply Chain Management (GSCM) scale, encompassing three dimensions (environmental SCM, social SCM, and economic SCM), was adopted from Xu & Gursoy [25] (see Appendix A). EP was assessed using seven items adapted from Yang et al. [12]. Similarly, hotel competitiveness was measured using five items as suggested by Yang et al. [12]. To ensure the survey's consistency and usability, it underwent evaluation by professors and education leaders. Modifications were made to certain statements in terms of rephrasing some sentences to better maintain content validity.

3.2. Sampling and Procedures

The population included hotel managers and department heads in Saudi Arabian deluxe hotels, who have sufficient knowledge about the processes. The questionnaire forms were self-administered to managers and department heads in deluxe hotels in different Saudi regions: Eastern, Western, Northern, and Southern. We were able to collect 500 completed questionnaires that were valid for data analysis. Out of these collected forms, 430 were fully completed, creating a good rate of responses that accounts for 86%, and with no missing data. Among the valid 430 answers, 92.3% of managers and department heads identified as male, while only 7.7% of the managers and department heads identified as female. Managers and department heads (66.7%) were between the ages of 35–50 and over 50 years.

4. Data Analysis and Results

PLS-SEM is the data analyses technique that was employed in this study. PLS is an algorithm based on variance used in path analysis [40]. PLS-SEM presents an option to use the traditional covariance-based SEM [41]. It has gained recognition, particularly in research focused on prediction and exploration. Unlike covariance-based SEM, PLS-SEM is not constrained by the sample normality assumption, making it suitable for different small sample sizes [40]. The choice of PLS-SEM for the research was induced by its suitability for exploratory studies and its flexibility in accommodating various sample sizes [42]. The PLS analysis was performed with the SmartPLS 4 program. The estimation of the study model involved conducting a bootstrapping procedure with 5000 resamples adopting reflective approach [41]. To address "common-method variance" (CMV) following recommendations from Podsakoff et al. [43], an investigation was calculated using Harman's one-factor test. The entire 21 variables were assessed in exploratory factor analysis (EFA), and the first single factor explained only 44.5% of the overall variance. This finding indicates that CMV is not a significant issue in this research [43]. Furthermore, all variance inflation factor (VIF) values were under the value of 0.5, implying that multicollinearity is not an issue (see Table 1).

The calculations of the measurement model involved assessing different criteria, e.g., "Cronbach's α", "Composite Reliabilities" (CR), and "Average Variance Extracted (AVE)". All variables within the scales confirmed standardized loadings of 0.7 or above, indicating strong convergent validity [41]. Both values of Cronbach's α and CR exceeded the lowest accepted threshold of 0.7, confirming the internal consistency of both variables and factors [42] (see Table 1). Additionally, the AVE scores for all factors exceeded the recommended threshold of 0.5, as indicated by Fornell & Larcker [44]. Confirming adequate discriminant validity [45], all AVEs are 0.5 or higher.

Table 1. Scale psychometric properties.

	Loadings	α	CR	AVE	VIF
Hotel competitiveness		0.929	0.930	0.779	
Compt_1	0.859				2.567
Compt_2	0.865				2.917
Compt_3	0.902				3.763
Compt_4	0.909				3.976
Compt_5	0.876				3.130
Economic SCM		0.803	0.799	0.721	
Econ_SCM1	0.752				1.240
Econ_SCM2	0.894				4.340
Econ_SCM3	0.892				4.320
Environmental SCM		0.895	0.938	0.579	
En_SCM1	0.773				2.700
En_SCM2	0.730				8.176
En_SCM3	0.732				2.351
En_SCM4	0.731				4.786
En_SCM5	0.759				4.960
En_SCM6	0.799				4.969
En_SCM7	0.800				4.522
Environmental Performance		0.954	0.955	0.785	
Env_Perf1	0.853				4.008
Env_Perf2	0.918				4.693
Env_Perf3	0.885				2.172
Env_Perf4	0.883				2.201
Env_Perf5	0.907				1.887
Env_Perf6	0.883				4.072
Env_Perf7	0.870				3.394
Social SCM		0.974	0.975	0.907	
Sco_SCM1	0.954				3.286
Sco_SCM2	0.957				1.847
Sco_SCM3	0.969				2.197
Sco_SCM4	0.940				3.577
Sco_SCM5	0.941				4.516

Following the methodology proposed by [44], we ensured the scale discriminant validity by verifying that the AVE square root of each factor (highlighted in bold in Table 2) surpassed the correlations between those specific factors and all other employed factors (see Table 2). An additional method to estimate discriminant validity is the heterotrait–monotrait (HTMT) ratio of relationships, which was recognized as a more robust technique compared to Fornell and Larcker's approach [44]. Worries regarding discriminant validity may arise if HTMT values (enclosed in brackets in Table 2) went beyond 0.9. Table 2 shows that ratios are below the designated threshold of 0.9, confirming the discriminant validity of the measurements for the constructs.

Table 2. Discriminant validity using "Fornell & Larcker and HTMT" procedures.

	1	2	3	4	5
1-Economic SCM	**0.849**				
2-Environmental SCM	0.715 (0.749)	**0.761**			
3-Environmental performance	0.807 (0.514)	0.742 (0.665)	**0.886**		
4-Hotel competitiveness	0.746 (0.544)	0.670 (0.666)	0.693 (0.735)	**0.883**	
5-Social SCM	0.673 (0.763)	0.676 (0641)	0.835 (762)	0.543 (0.570)	**0.952**

Note: The AVE square root of each factor.

The bootstrapped R2 values, depicted in Figure 2, indicated that the cumulative influence of GSCM dimensions (environmental SCM, economic SCM, and social SCM)

explained 81.6% of the variance in environmental performance. Moreover, when factoring in both GSCM dimensions and environmental performance, the combined explanatory power accounted for 60.1% of the variance in hotel competitiveness.

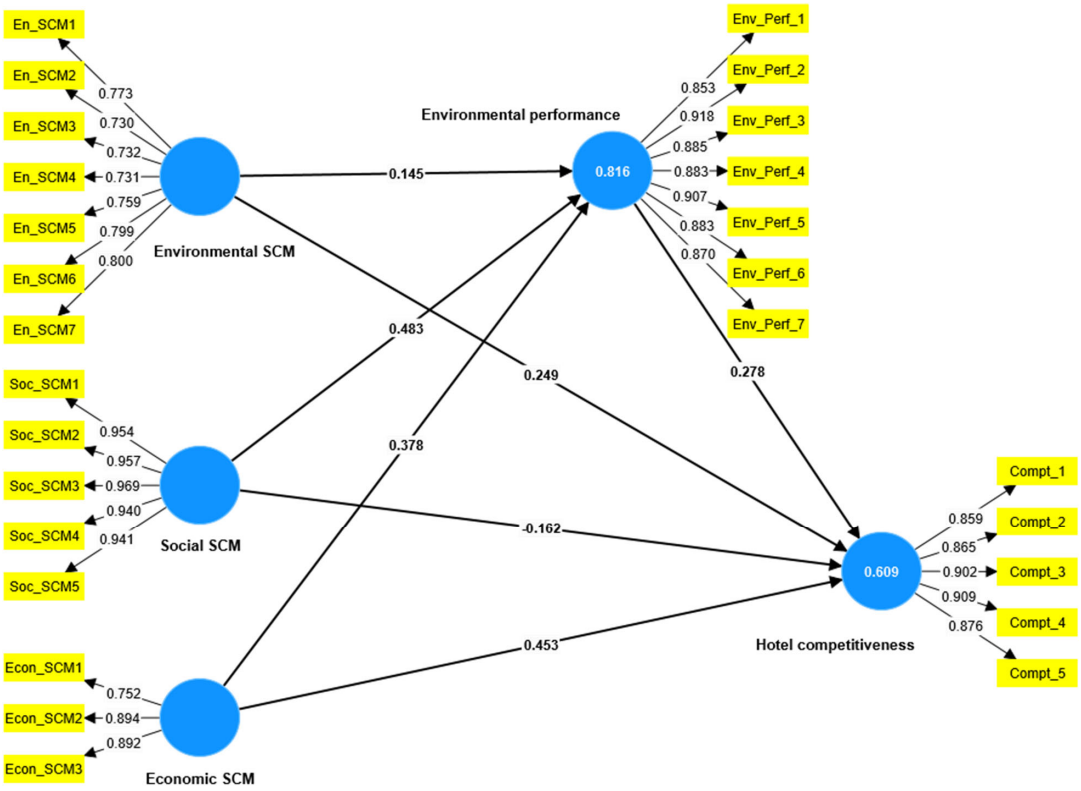

Figure 2. The examined research model.

As indicated in Table 3, hotel competitiveness experienced a significant positive influence from environmental SCM (β = 0.249, t = 3.776, $p < 0.001$), and economic SCM (β = 0.453, t = 7.825, $p < 0.001$), thereby approving H1 and H3. However, the findings indicated a negative and significant impact of social SCM on hotel competitiveness (β = −0.16, t = 3.092, $p < 0.01$), leading to the rejection of H2. Furthermore, the PLS-SEM results provided evidence that environmental performance was positively and significantly affected by environmental SCM (β = 0.145, t = 3.561, $p < 0.001$), social SCM (β = 0.483, t = 10.942, $p < 0.001$), and economic SCM (β = 0.378, t = 10.273, $p < 0.001$), thereby approving H4, H5, and H6. Finally, a significant and positive influence of EP on hotel competitiveness was observed (β = 0.278, t = 3.717, $p < 0.001$), thus supporting H7.

Table 3. Results of hypotheses testing.

Hypotheses	β	t-Value	*p* Value	Results
Environmental SCM -> Hotel competitiveness [H1].	0.249	3.776	0.000	[Supported]
Social SCM -> Hotel competitiveness [H2].	−0.162	3.091	0.002	[Rejected]
Economic SCM -> Hotel competitiveness [H3].	0.453	7.825	0.000	[Supported]
Environmental SCM -> Environmental performance [H4].	0.145	3.561	0.000	[Supported]
Social SCM -> Environmental performance [H5].	0.483	10.924	0.000	[Supported]
Economic SCM -> Environmental performance [H6].	0.378	10.273	0.000	[Supported]
Environmental performance -> Hotel competitiveness [H7].	0.278	3.317	0.001	[Supported]
Indirect hypotheses				
Environmental SCM -> Environmental performance -> Hotel competitiveness [H8].	0.040	2.096	0.036	[Supported]
Social SCM -> Environmental performance -> Hotel competitiveness [H9].	0.134	3.314	0.001	[Supported]
Economic SCM -> Environmental performance -> Hotel competitiveness [H10].	0.105	3.400	0.001	[Supported]

As presented in Table 3, environmental performance mediated the path from environmental SCM to hotel competitiveness (β = 0.040, t = 2.096, $p < 0.05$), thus approving H8. Likewise, the results indicated that environmental performance mediated the path from social SCM to hotel competitiveness (β = 0.134, t = 3.314, $p < 0.01$), providing support for H9. Finally, the results from PLS-SEM analysis indicated that environmental performance could serve as a mediator in the link between economic SCM and hotel competitiveness (β = 0.105, t = 3.40, $p < 0.01$), aligning with H10.

5. Discussion and Implications

This study examined the mediating influence of EP in the link between three aspects of GSCM (economic, social, and environmental), and the competitiveness of hotel organizations. The findings showed that competitiveness of the organizations has been significantly and positively influenced by the environmental aspect of GSCM. This finding implies that environmental GSCM, i.e., green product design, green service design, environmental management systems, pollution control, product management and its life extension, and recycling, significantly improves hotel image and increases productivity as well as customer satisfaction. This has ultimate positive impact on hotel profits. This finding is in line with previous studies [25,26], which found that environmental GSCM significantly influences corporate image and overall enterprises' competitiveness. The finding also supported the work of Al-khawaldah et al. [27], who found that environmental GSCM creates a competitive advantage; hence, enhancing the overall hotel competitiveness.

The findings also showed that the economic dimension of GSCM has significant direct influence on hotel competitiveness. This means that the growth of revenue, controlling costs, and the growth of market share significantly affect hotel productivity, profit, and improves its image in the long run. This aligns with previous studies [25,30], which found that resource efficiency and cost effectiveness enhance financial robustness and enterprise's competitiveness. Economic GSCM could stand as a competitive edge and key driver for hotel competitiveness. On the other hand, the results did not confirm a significant direct impact of social GSCM on hotel competitiveness, which disagrees with previous studies [25,28] that confirmed this relationship. The reason for this insignificant relationship is mainly that GSCM is a new practice to the Saudi enterprises, including the hotel industry; hence, employees, suppliers, community, and government have not yet developed the full capabilities that have a direct effect on hotel competitiveness. Managers' assessments of the efforts made by employees, customers, community, suppliers, and government were not enough to achieve hotel competitiveness.

The three dimensions of GSCM (environmental, social and economic) have a significant influence on environmental performance of hotels. This means that when hotels adopt these dimensions of GSCM, hotels are more likely to reduce greenhouse gases, wastewater, waste overall, and pollution. They also significantly contribute to decreasing cost of material purchasing, cost of disposal of hazardous materials, and cost of waste treatment. The results support previous studies, which also confirmed that environmental dimension of GSCM contributes to the reduction of greenhouse gases, footprint and encourages environmentally responsible behavior and performance [13,14]. In addition, social GSCM, which considers sustainability efforts of employees, customers, community, suppliers, and government, has a strong relationship with environmental performance [25,32]. Moreover, economic GSCM, which focuses on resource efficiency, cost-effective practices, and market share growth, enhances environmental performance [25,35]. The results also confirmed that environmental performance significantly affect the hotel competitiveness. This implies that when hotels maintain environmental performance, they gain a competitive advantage compared to other hotels that pay less attention to environmental performance. In other words, environmental performance enhances hotel image, supports customer satisfaction, improves service quality, increases productivity, and ensures higher profit. This finding is supported by previous studies [38,39].

The results from PLS-SEM analysis confirmed the important role of environmental performance as a mediator in the link between three dimensions of GSCM (environmental, social, and economic) and hotel competitiveness. As discussed earlier, these three GSCM dimensions explained 81.6% of the variance in environmental performance. Environmental performance was able to change the relationship between social GSCM and hotel competitiveness. Social GSCM was found to indirectly affect hotel competitiveness through environmental performance. This finding reflects the important role of environmental performance in this relationship.

The findings have several practical and theoretical implications. Regarding the theoretical implications, the results contribute to the body of literature on hotel competitiveness, which become more critical in today's competitive industry. The study explained that two factors, i.e., environmental and economic, significantly affect hotel competitiveness directly or indirectly. The social aspect of GSCM failed to have a significant direct influence on hotel competitiveness, but it has an indirect effect through environmental performance. The results showed that the combined explanatory power of both GSCM dimensions and environmental performance accounted for 60.1% of the variance in hotel competitiveness. The study provides an understanding of the role of GSCM in achieving EP in hotels. This study shows the factors that affect hotel competitiveness directly or indirectly. The study results confirm that research findings cannot simply be generalized to all hotels without further testing, as this study found no direct effect of social GSCM on hotel competitiveness since the Saudi context is different and GSCM is a new practice to the Saudi hotel industry. Hence, stakeholders such as employees, suppliers, community, and government have not yet developed the full capabilities that have a direct effect on hotel competitiveness. Therefore, we argue that caution should be considered when generalizing the research findings to different contexts, especially when it comes to the effect of GSCM on EP and competitiveness of organizations.

The results also contribute to the hotel industry, particularly in Saudi Arabia, and its strategic direction. The first practical implication is that Saudi government has paid higher attention to green initiatives; however, businesses in Saudi Arabia, including hotels, have started to pay high attention to greening their businesses to align with the Saudi Vision 2030 and the GSI [46–49]. Businesses in Saudi Arabia do not save any efforts to ensure customer satisfaction [50]; however, understanding the factors that contribute not only to customer satisfaction, but also to hotel competitiveness is important. Therefore, these factors should gain more attention from hoteliers in Saudi Arabia. This study showed that two dimensions of GSCM (environmental and economic) have direct and indirect (including social GSCM) effect on hotel competitiveness, including customer satisfaction. The results showed that social GSCM failed to significantly influence environmental performance of hotels. This requires paying more attention to raising the awareness of the key stakeholders, i.e., employees, customers, suppliers, and local community about the benefits of adopting green practices for environmental performance as well as their business competitiveness.

6. Conclusions

This study draws on GSCM to examine the factors that contribute to both EP and hotel competitiveness in Saudi Arabia. The results of PLS-SEM showed that:

- Two dimensions of GSCM (environmental and economic) had a significant positive influence on hotel competitiveness.
- However, the social dimension of GSCM failed to have a significant positive direct effect on hotel competitiveness as was hypothesized. This indicates a lack of activities on green sustainable development by workers, guests, suppliers, and the community, forcing an initiative to improve awareness of the benefits of sustainable initiatives.
- The three aspects of GSCM have a strong positive impact on EP. These results indicate that GSCM's efforts to minimize greenhouse gas emissions, wastewater, pollution, waste, and all related costs, were effective.

- The findings supported the importance of EP as a link between the three aspects of GSCM and hotel competitiveness. This illustrates the crucial role of EP in the link between GSCM and hotel competitiveness.

This study was undertaken on the hotel industry in Saudi Arabia; hence, there are some limitations, albeit they become opportunities for future studies. First, the result cannot be generalized to other contexts without further testing. Second, the study relied on self-reporting, using a survey for data collection from hotel managers; therefore, future research could adopt a longitudinal study to verify the findings of the current study. Third, other factors could be examined, such as the moderating effects of managers' demographics (e.g., gender, experience) on the relationship between study variables.

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Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: Data are available upon request from researchers who meet the eligibility criteria. Kindly contact the first author privately through e-mail.

Conflicts of Interest: The authors declare no conflicts of interest.

Appendix A

Environmental Supply Chain Management
Managers' perceptions of hotel supply chain environmental sustainability efforts related to:
1. Product design: purchasing greener products
2. Service process design: greener service processes
3. Product management during use
4. Product life extension
5. Recycling
6. Pollution control
7. Environment management systems
Social Supply Chain Management
Managers' perceptions of hotel supply chain social sustainability efforts related to:
1. Employees
2. Customers
3. Community
4. Suppliers
5. Government

Economic Supply Chain Management
Managers' perceptions of hotel supply chain economic sustainability efforts related to:
1. Revenue growth
2. Cost control
3. Market share growth
Hotel Competitiveness
1. Hotel image improvements
2. Service quality improvements
3. Customer satisfaction increases
4. Productivity increases
5. Higher profits
Environmental Performance
Reduction of greenhouse gases (e.g., CO_2, SOx, NOx...)
1. Reduction of waste water (e.g., sewage)
2. Reduction of noise pollution
3. Reduction of wastes (e.g., oily waste, sludge, and rubbish)
4. Decrease of cost for materials purchasing
5. Decrease of cost for disposal of hazardous materials
6. Decrease of fee for waste treatment

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